

Wide Single Carriageway Roads

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Wide Single Carriageway Roads (WS2)

- WS2 has two distinct formats in the UK:
 - Two wide lanes of traffic – one lane in each direction, with overtaking allowed in either direction, or:-
 - Three lanes of traffic – one in each direction, and an overtaking lane.
- Another format is WS2+1, used in the 1950s and 1960s in the UK, without being entirely satisfactory.

Deployment of WS2

- For WS2 with an overtaking lanes:
 - Overtaking is either forbidden in one direction, or
 - “Preference” is given to one direction.
- Traditionally, WS2 is a solution introduced as a cost-effective option where dual-carriageway is not justified, or is infeasible.
- But where a need for easier, more formal, and safer overtaking has been identified.

Example of WS2 With Overtaking Lane



Another Example of WS2



Safety of WS2

- Recent HA research has indicated that WS2 in England is safer than S2.
- Many WS2 roads have as good a record as an average dual carriageway.
- But study found that the percentage of accidents occurring at junctions on WS2 was higher.
- And, percentage of accidents involving overtaking was more than twice the expected average.

Safety of WS2 (Continued)

- This study, and other research, indicates the value of WS2 is greater than once thought.
- Has given HA the confidence to continue using WS2 where appropriate.
- Study also concluded that:-
 - WS2 with overtaking lanes best suited to improvement of existing roads.
 - Investigate use of WS2+1 for new routes with moderate traffic flow levels.

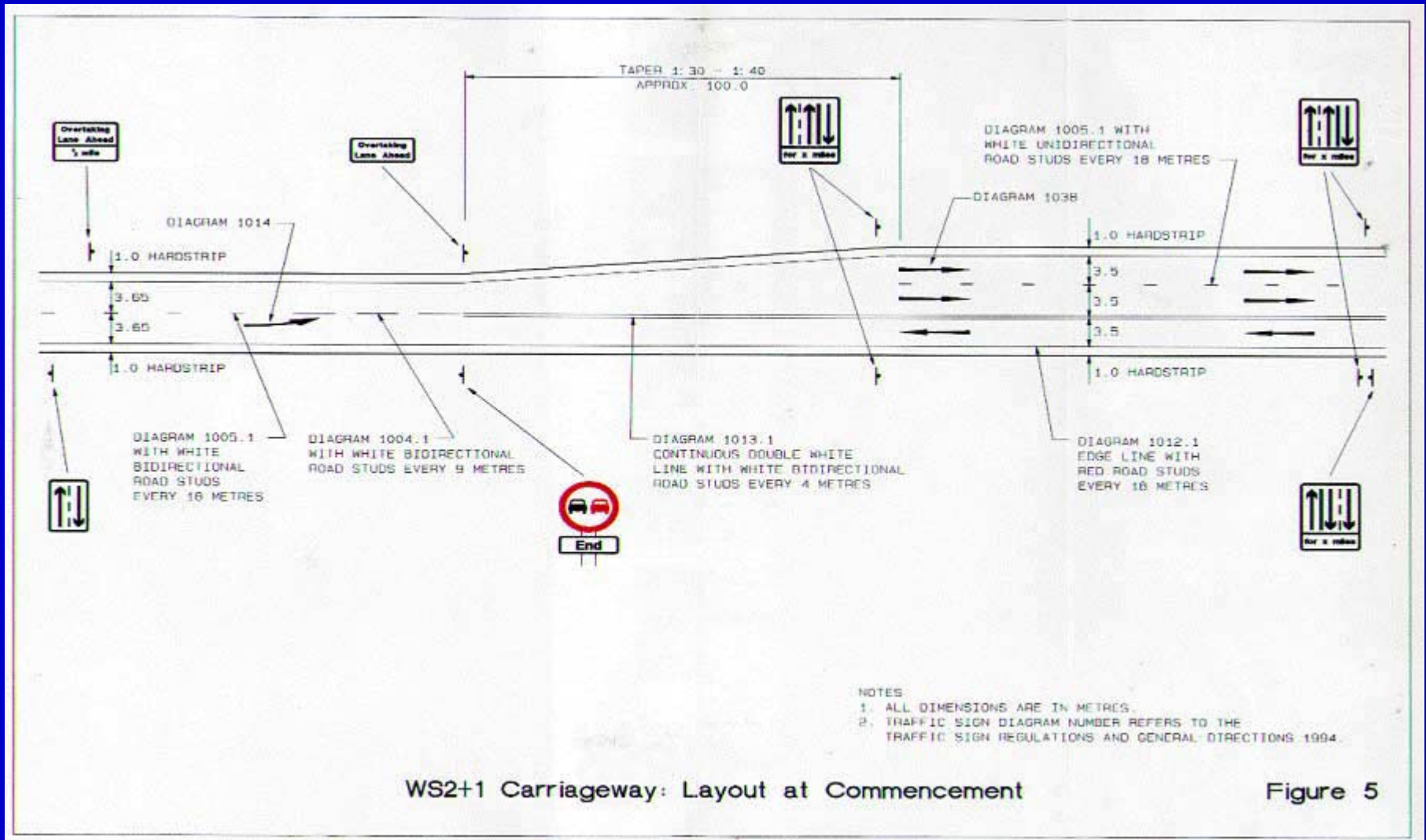
WS2+1

- WS2+1 - two lanes in one direction and one in the other, with regular switching of two lane section from one direction to the other.
- Has not so far been used in England.
- German study has indicated that conversion from WS2 has reduced accident rates.
- Trial of WS2+1 is now being carried out in Scotland.

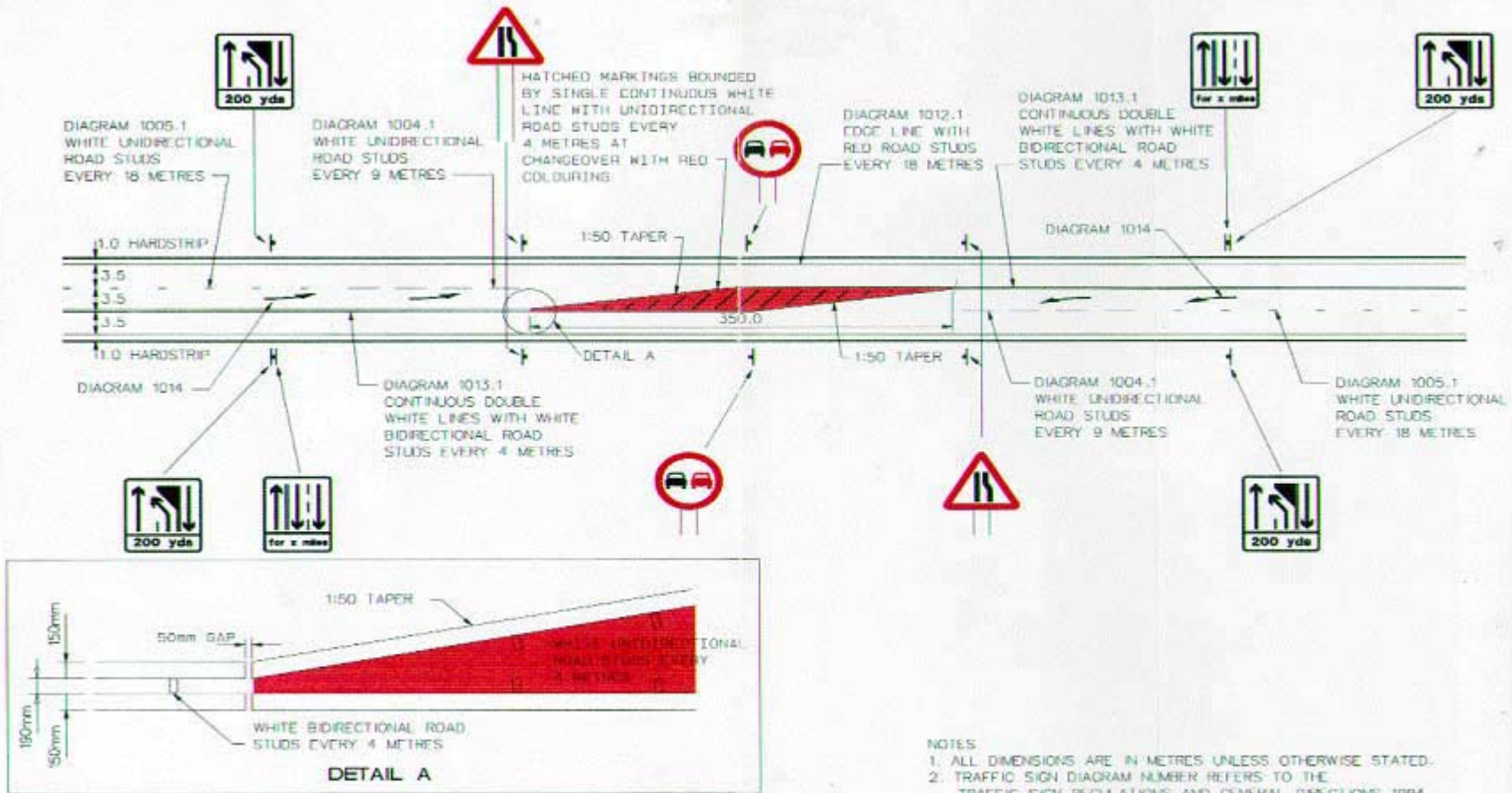
Layout of WS2+1

- Slides follow which show:-
 - Layout at commencement
 - Layout of 2+1 to 1+2 changeover
 - Layout of 1+2 to 2+1 changeover
 - Layout at end

Layout at Commencement



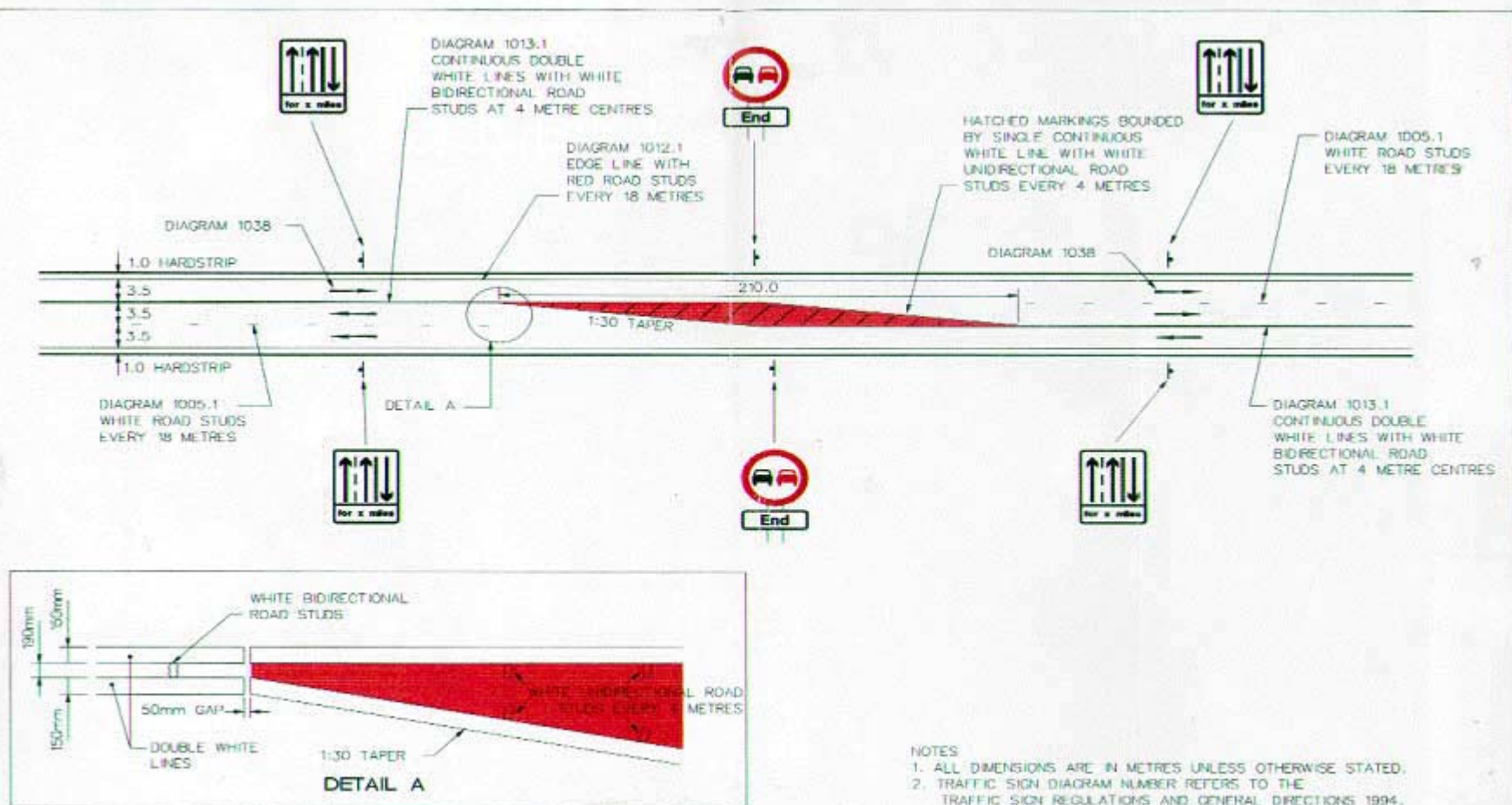
Layout of 2+1 to 1+2 Changeover



WS2+1 Carriageway: Layout of 2+1 to 1+2 Changeover

Figure 7

Layout of 1+2 to 2+1 Changeover



WS2+1 Carriageway: Layout of 1+2 to 2+1 Changeover

Figure 6

WS2+1 Carriageway: Layout at End



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Concerns About WS2+1

- No facilities for cycles and slow moving farm traffic.
- Maintenance requires higher level of traffic management.
- Short length of changeovers from 2 to 1 lane could have a safety risk with higher speed of traffic.
- Close spacing of junctions in the UK would make existing roads unsuitable for conversion.
- Further trials needed before implementation.

WS2+1 TRIAL

- Based on the layouts from the study a trial of WS2+1 is being carried out on the A68 on the Scottish border.
- The scheme was opened to traffic in December 2001.
- The trial is being monitored to assess driver behaviour and operation in relation to traffic volume and speed. Results are imminent.

Summary

- WS2 is a traditional solution for existing roads which we now have more confidence in using.
- WS2 with overtaking lane is safer than S2 and WS2 with two lanes.
- WS2+1 is more prevalent in other European countries
- The HA is monitoring the outcome of a trial, which if successful may lead to its use on new roads.